



west virginia department of environmental protection

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ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.: R13-1869B
Plant ID No.: 023-00023
Applicant: Allegheny Wood Products International, Inc. (AWP)
Facility Name: Petersburg Facility
Location: Petersburg, Grant County
NAICS Code: 321113 (Sawmills)
Application Type: Modification
Received Date: December 07, 2016
Engineer Assigned: Thornton. E. Martin Jr.
Fee Amount: \$3,500
Date Received: December 07, 2016
Complete Date: January 05, 2017
Applicant Ad Date: December 13, 2016
Newspaper: *Grant County Press*
UTM's: Easting: 660.476 km Northing: 4,316.993 km Zone: 17
Description: Applicant proposes to replace a Lambion 5.99 MMBtu/hr boiler with a Hurst 9.6 MMBtu/hr boiler.

PERMIT HISTORY

Allegheny Wood Products, Inc. (AWP) operates a hard wood drying kiln facility in Petersburg, WV. The original kiln facility, which included a Lambion 5.99 million BTU/hr wood waste-fired boiler was constructed in 1984. Wood machining equipment with a baghouse for dust collection was installed from 1989 through 1994 due to increases in product demand. A second boiler, a Superior, rated at a maximum design heat input 11.15 million BTU/hr, and a combination waste wood shredding and boiler feed system were installed in 1992.

The initial installation as well as the wood machining operations installed prior to 1992 were of a size which was outside existing Regulation 13 permit requirements for that time period.

DESCRIPTION OF PROCESS

The applicant proposes to replace their Lambion 5.99 MMBtu/hr boiler with a Hurst 9.6 MMBtu/hr boiler. Sawdust will be fed into the 200 HP (9.6 MMBtu/hr) Hurst Boiler (Serial No.: FB200-15-4) from the existing in-feed system. Using the sawdust as fuel, the boiler generates steam for use in the lumber drying process. The generated steam is transferred to the dry kilns via steam lines to be used in the drying process.

The Applicants' modification to the Petersburg plant will be configured with the following list of equipment and control devices:

Emission Unit ID	Emission Point ID	A M R ¹	Emission Unit Description	Year Installed	Design Capacity	Control Equipment ²
001	E-011	R	Wood Fired Boiler - Lambion	2017	5.99 MMBtu/hr	NA
001	E-011	A	Wood Fired Boiler - Hurst Model FB200-15	2017	9.6 MMBtu/hr	Hurst Multi-cyclone 010
002	E-012	M	Wood Fired Boiler - Superior Boiler Works Model 3-SF1788-S15-M	1992	11.15 MMBtu/hr	Zurn Multi-Cyclone 014
009	E-013	M	Baghouse for Dust Collection from Wood Working Equipment	1989 - 1994	6:1 Air to Cloth Ratio	N/A

¹ A - Addition; M - Modification; R - Removal (Existing unmodified equipment to be included in the permit is labeled with an M.)

² 010 - Hurst 12K-15 Multicyclone, 80% Minimum Collection Efficiency; 014 - Zurn Multi-Cyclone, 90% Maximum Collection Efficiency; Baghouse - Nordfad Model No. NFS 5AJ / 1BL, 99% Dust Collector Efficiency; NA - Not Available; N/A - Not Applicable

SITE INSPECTION

Chris Scanlan, an Inspector of DAQs' Compliance and Enforcement Section from our Eastern Panhandle Regional Office performed a full, on-site, targeted inspection of the Petersburg facility. Notes from the inspection are as follows: On August 3, 2016, performed a F.C.E of Allegheny Wood products. V.E.'s were performed on boiler exhaust. Opacity below 10% limit. All records were reviewed, status code 30.

Directions: From the intersection of US Route 220 and SR 28 in Petersburg, follow 220 South to Fish Hatchery Road (220/2). Turn right onto Fish Hatchery Road. Follow to Airport Road, turn right onto Airport Road, plant is on the right.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

The facility has three emission points, the Hurst Boiler with Multi-Cyclone, the Superior Boiler with Multi-Cyclone, and the baghouse collector.

The dry kiln facility is designed such that fugitive emissions are limited to general roadway emissions. All roadways are paved. All material storage bins are enclosed and there are no

stockpiles of saw dust on site. All equipment with a potential to generate particulate emissions are either attached to dust collection equipment or fully enclosed.

Particulate emissions from plywood cutting and sanding were determined using the emission factor of 0.1 lb/ft² from AP-42, Table 10.3-1. Wood chips from the shredder are intercepted by the by the Zurn Multi-Cyclone which is vented to the baghouse. It is assumed that 10% of the weight of the shredded wood waste is vented to the baghouse.

Pollutant emissions for the replacement boiler were calculated by the Division of Air Quality's Small Business Assistance Program using AP-42: *A Compilation of Air Emission Factors*, specifically Chapter 1.6, "Wood Residue Combustion in Boilers."

Allegheny Wood Products International, Inc.'s proposed modification will result in the following estimated potential to discharge controlled emissions:

Emission Point ID	Emission Source	Pollutant	Proposed Emissions	
			(lb/hr)	(tpy)
E-011	Hurst Boiler, 9.6 MMBtu/hr	Nitrogen Oxides	2.11	9.25
		Carbon Monoxide	5.76	25.23
		Sulfur Dioxide	0.24	1.05
		PM	2.11	9.25
		Volatile Organic Compounds	0.37	1.64
E-012	Superior Boiler, 11.15 MMBtu/hr	Nitrogen Oxides	1.69	7.4
		Carbon Monoxide	35.46	155.3
		Sulfur Dioxide	0.33	1.45
		PM	3.41	14.9
		Volatile Organic Compounds	1.8	7.88
E-013	Bag-House (Nordfad Model NFS 5AJ / 1BL)	PM	5.62	11.25

REGULATORY APPLICABILITY

The proposed modification is subject to the following state and federal regulations.

45CSR2 - *To Prevent and Control Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchangers*

The purpose of this rule is to establish limitations for smoke and particulate matter which are discharged from fuel burning units. Per this rule, Section 2.14 defines an indirect heat exchanger as a device that combusts any fuel and produces steam or heats water or any other heat transfer medium. Section 2.10 defines a fuel burning unit as any furnace, boiler apparatus, device, mechanism, stack or structure used in the process of burning fuel or other combustible material for the primary purpose of producing heat or power by indirect heat transfer.

Both boilers are subject to the provisions of 45CSR2. The Hurst boiler has a maximum design heat input (MDHI) of less than 10 million BTU/hr and therefore is subject only to the opacity limits of Regulation 2. Specifically Section 3.3 prohibits the emission of smoke that is greater than ten (10) percent opacity into the atmosphere.

The facility is not exempt from sections 4 (PM weight standard), 5 (Control of fugitive PM), 6 (Registration), 8 (Testing, Monitoring, Record-keeping, and Reporting), and 9 (Start-up, Shutdowns, and Malfunctions) because the Superior boiler is over 10 MMBtu/hr. The facility will be subject to the opacity requirements in this rule, which is 10% opacity based on a six minute block average.

45CSR7 - *To Prevent and Control Particulate Matter Air Pollution from Manufacturing Processes and Associated Operations*

The facility is subject to the provisions of 45CSR7 - "To Prevent and Control Particulate Air Pollution From Manufacturing Process Operations", however the information provided in the permit application for control of fugitive particulate emissions complies with the requirements of Regulation 7. The wood working equipment and associated baghouse should meet the hourly emission limits set forth in 45CSR7.

45CSR10 - *To Prevent and Control Air Pollution from the Emission of Sulfur Oxides*

The Hurst boiler is exempt by Section 10.1. of 45CSR10. "Any fuel burning units having a design heat input under ten (10) million BTU's per hour will be exempt from section 3 and sections 6 through 8."

45CSR13 - *Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Administrative Updates, Temporary Permits, General Permits, and Procedures for Evaluation*

The proposed modification will be subject to the requirements of 45CSR13 because it will result in the potential to discharge greater than 6 pounds per hour and 10 tons per year of a regulated air pollutant (CO). The applicant has submitted the \$3,500 application fee and published a Class I legal advertisement in the *Grant County Press* on December 13, 2016.

45CSR30 - *Requirements for Operating Permits*

The proposed facility is subject to 45CSR30 because of the area source MACT (40CFR63, Subpart JJJJJ - *National Emission Standards for Hazardous Air Pollutants for Area Sources: Industrial, Commercial and Institutional Boilers and Process Heaters* applicable to the Hurst boiler.

40CFR63, Subpart JJJJJJ - *National Emission Standards for Hazardous Air Pollutants for Area Sources: Industrial, Commercial and Institutional Boilers and Process Heaters*

The affected facility to which this subpart applies is each existing or new coal, new biomass, and new oil units. New is defined as any boiler that commenced construction after June 04, 2010. The Hurst boiler was constructed in 1995 and being relocated to the AWP facility. Therefore, the Hurst boiler is considered existing.

Requirements under this subpart are dependent on whether the facility is an area source or major source of HAP and whether the boiler is less than 10 MMBtu/hr or greater than 10 MMBtu/hr. AWP is an area source of HAP and classified as a Title V major source because of the potential to emit greater than 100 tons per year of a criteria pollutant (CO).

Requirements under this subpart for an existing Hurst boiler (<10MMBtu/hr) are:

1. Conduct a tune-up of the boiler biennially as specified in § 63.11223.

The proposed minor modification of a Title V source by relocating the Hurst boiler (<10 MMBtu/hr) is not subject to the following federal rule:

40CFR60, Subpart Dc - *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units*

The affected facility to which this subpart applies is each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 29 megawatts (MW) (100 million British thermal units per hour (MMBtu/h)) or less, but greater than or equal to 2.9 MW (10 MMBtu/h).

TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

AP-42 provides emission factors for various organic compounds that are considered Hazardous Air Pollutants (HAPs) and Toxic Air Pollutants (TAPs) that may be emitted from the burning of wood waste. An emission factor for lead is also available in AP-42.

The relevant HAP's identified with the burning of wood waste are naphthalene (46 lbs/year) and acetaldehyde (26 lbs/year). Both pollutants are considered VOCs and regulated as such.

The relevant TAPs identified with the burning of wood waste are formaldehyde (112 lbs/year) and benzene (136 lbs/year). There is no change in the VOC emission limit in this permit.

Predictive lead emissions using AP-42 emission factors provide yearly emissions below 5 pounds.

AIR QUALITY IMPACT ANALYSIS

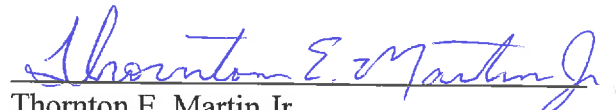
Because this is a minor modification to an existing non-major source as defined by 40CSR14, no modeling is necessary.

CHANGES TO PERMIT R13-1869A

1. The permit will be put into the new boiler plate Revision (2-1-13).
2. The facility has three emission points, the Hurst Boiler with Multi-Cyclone, the Superior Boiler with Multi-Cyclone, and the baghouse collector. These are now included as new table 1.0.

RECOMMENDATION TO DIRECTOR

The information provided in the permit application indicates Allegheny Wood Products International, Inc.'s wood machining and kiln facility meets all the requirements of applicable rules and regulations. Therefore, impact on the surrounding area should be minimized and it is recommended that the Petersburg, Grant County facility should be granted a 45CSR13 Permit to Modify.


Thornton E. Martin Jr.
Permit Engineer

January 05, 2017
Date